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Fungus or bacterium and vice versa?

Cavaletti & Monciardini (2004) and Strobel *et al.* (2004) discussed whether an organism was fungal or bacterial. Indeed, mistakes continue to be made by calling streptomycetes fungi. Ergosterol is underestimated in its ability to distinguish fungi from others organisms. The lipid is practically unique to fungi, sufficient for its frequent use in quantification in environments with other organisms; it is not recorded in bacteria. Contamination of cultures may not be (such) a potential problem as with PCR, as targets are not of course amplified. We used the method to analyse fungi in water amongst other things (Kelly *et al.*, 2003). In general, protocols involve refluxing for about 1 h, phase separation and analysis by chromatography. TLC was used initially which could be adequate for the proposed purpose. However, HPLC is the method of choice and a hyphenated technique (e.g. HPLC-DAD/MS) would be beneficial. I found that a microwave extraction procedure was satisfactory and gave advantages of rapidity and small sample size (Young, 1995). Furthermore, fungi contain partially saturated and saturated ubiquinones whereas only the latter are detected in bacteria (Paterson, 1998). Of course, fungi do not possess menoquinones. Thus affiliation of the organism in question may be resolved if the analysis of ergosterol and perhaps the other compounds were undertaken.

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